

Work Order ID 136919

136919

Friday, September 18, 2015 1:18:39 PM

Page 1

Item ID: D2600-1-160

Revision ID:

Item Name: Extrusion Round 3" 206

Start Date: 9/18/15 Start Qty: 80.00

Required Date: 9/18/15 Req'd Qty: 80.00

Reference:

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Approvals: Process Plan: ML3 Date: SEP 18 2015

QC: _____ Date: _____ SPC (Y/N): _____

Tooling:

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2600	E								

100

0.00

100

Purchasing

Purchasing

PURCHASING

Memo

Issue P/O: 29864

a) Extrude as per Dwg D2600 (160" long)

b) Material: 6061-T6

c) Material certification is required.

EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Packaging

Memo

Ensure material certification is attached

0.03

OCT 16 2015

DAS

6

989

85 92

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 136919

Friday, September 18, 2015 1:18:39 PM

136919

Page 2

Item ID: D2600-1-160

Accept

N9000040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Extrusion Round 3" 206

Start Date: 9/18/15 Start Qty: 80.00

80

Cust Item ID:

Required Date: 9/18/15 Req'd Qty: 80.00

80

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC18 In-Coming Inspection Material	0.00							
120									
QC	Memo	0.00							
Quality Control	Check Pull test per Dwg D2600 for compliance page attached Check hardness with Webster tester								
130	Identify as per dwg & Stock Location: <u>46</u>	0.00							
130									
Packaging	Memo	0.01							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.13							
Quality Control									

(92) 15-10-21

(92) 15-10-21

MLW OCT 2 2015

SA 20151021

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
				OTHER : ☐			

Picklist Print

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Page 1

Work Order ID: 136919

136919

Parent Item: D2600-1-160

D2600-1-160

Parent Item Name: Extrusion Round 3" 206

Start Date: 9/18/15

Required Date: 9/18/15

Start Qty: 80.00

Required Qty: 80.00

Comments: IPP D: 02.09.05 Added DSK 066 KJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-1-160P		Purchased	No			110	Each	0.0000	1	80			
D2600-1-160P									**	85	92		
Extrusion Round 3" 206												OCT 16 2015	DAS EG 300

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐			
Misidentified ☐	Past Due ☐				

SPECIFICATION CONTROL DRAWING

D2600-X-XXX EXTRUSION

NOTES:

1) MATERIAL: 6061-T6 ALUMINUM PER QQ-A-200/8 OR AMS-QQ-A-200/8 OR ASTM B221

MINIMUM TENSILE YIELD STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 40 KSI
MINIMUM ELONGATION = 8%

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES

- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N & B/N PER DART QSI 044 6.1 (FINE POINT PERMANENT INK MARKER)
- 7) WEIGHT: D2600-1 = 0.078 lb/in, D2600-3 = 0.130 lb/in, D2600-5 = 0.045 lb/in, D2600-7 = 0.091 lb/in
- 8) NO TOOLING MARKS
- 9) FOR D2600-1, PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH (EX. D2600-1-160 IS 160" LONG).
D2600-1 EXTRUSION MANUFACTURED FROM:
- CARADON INDALEX DIE # MH-18870
- SIGNATURE ALUMINUM (BON-L) DIE # 897121
- 10) FOR D2600-3, PART NUMBER IS D2600-3-XXX WHERE XXX IS CUT LENGTH (EX. D2600-3-120 IS 120" LONG).
D2600-3 EXTRUSION MANUFACTURED FROM:
- CARADON INDALEX DIE # MH-18859
- SIGNATURE ALUMINUM (BON-L) DIE # 897122
- 11) FOR D2600-5, PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH (EX. D2600-5-108 IS 108" LONG).
D2600-5 EXTRUSION MANUFACTURED FROM:
- CARADON INDALEX DIE # MS-18871
- 12) FOR D2600-7, PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH (EX. D2600-7-125 IS 125" LONG).
D2600-7 EXTRUSION MANUFACTURED FROM:
- CARADON INDALEX DIE # MS-18872

RELEASED
2012-01-11

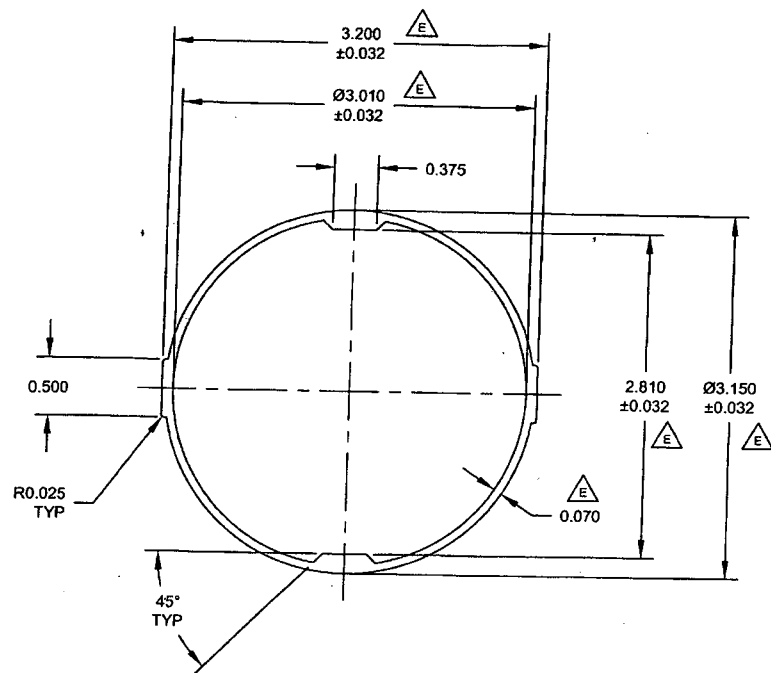
E	REFORMAT DWG; ALL DIMS & TOL. UPDATE TO MATCH MFG DIE DWGS; ADD ASTM B221 SPEC (D8-1)	CP	11.10.18
D	INCREASE MIN. UTS TO 40 KSI	DS	98.08.20
C	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.	DS	98.04.16
B	CHANGE MATERIAL SPEC.	DS	97.09.09
A	NEW ISSUE	DS	97.01.21
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	11.10.18		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

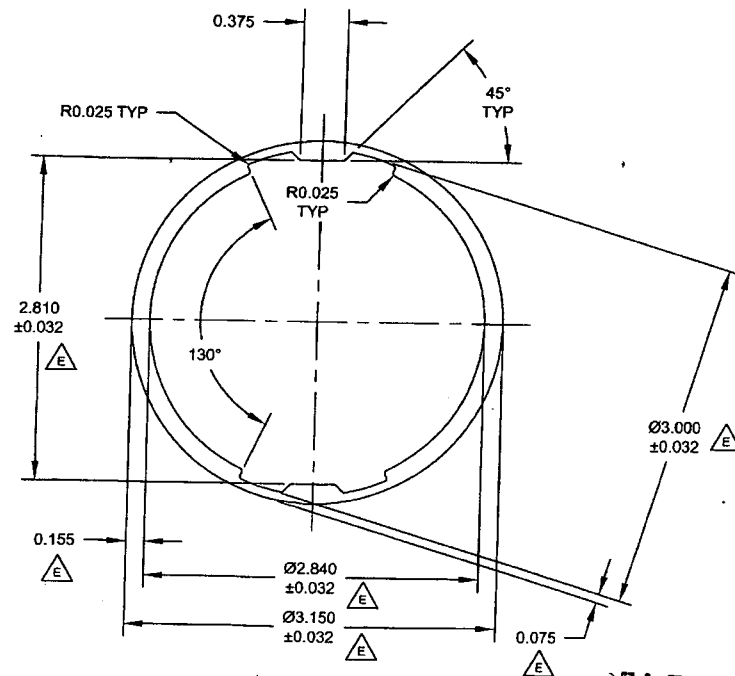
DRAWING NO. REV. E
D2600 SHEET 1 OF 3
TITLE SCALE
EXTRUSION NTS

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8 7 6 5 4 3 2 1



D2600-1 EXTRUSION

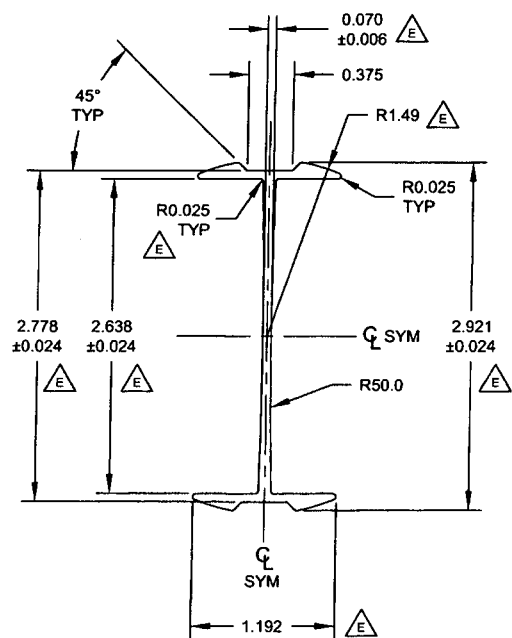


D2600-3 EXTRUSION

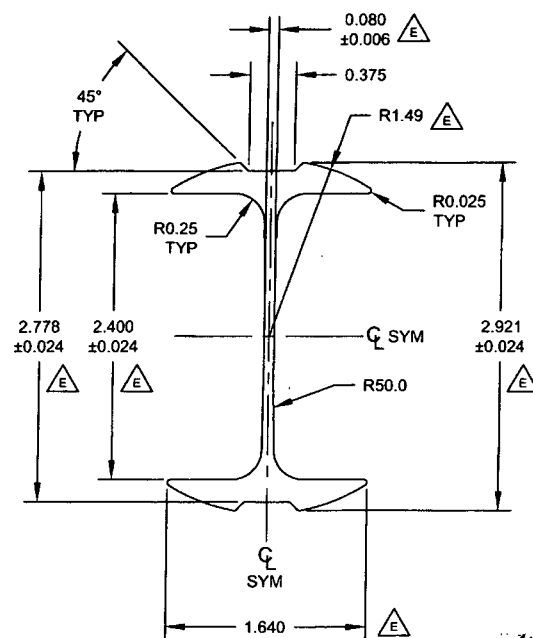
RELEASED
2012-01-10

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. E
MFG. APPR.		D2600	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		EXTRUSION	NTS
DATE	11.10.18	COPYRIGHT © 1997 BY DART AEROSPACE LTD	
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8 7 6 5 4 3 2 1



D2600-5 EXTRUSION



D2600-7 EXTRUSION

RELEASED
2012-01-11
JND

DESIGN	4	DART AEROSPACE LTD	
DRAWN	SS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. E
MFG. APPR.	EL	D2600	SHEET 3 OF 3
APPROVED	#	TITLE	SCALE
DE APPR.	#	EXTRUSION	NTS
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ACCT# 46024

Phone: (800) 587-5780 Fax: (905) 427-2207

Visit us at www.signaturealuminum.comSIGNATURE ALUMINUM CANADA
1850 CLEMENTS ROAD
PICKERING ON L1W 3R8

PACKING LIST

PACKING LIST DATE / DATE DU BOI
10-14-15PACKING LIST NUMÉR / N° DE BO
022903SALES ORDER NUMBER / N° DE C
120622

SHIP TO / EXPÉDIÉ À

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
CANADA

PHONE: 613-632-5200

SOLD TO / VENDUE À

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
CANADA

PHONE: 613-632-5200

TERMS / FREIGHT

PP

REFER TO
THESE NUMBERS ON
ALL CORRESPONDANCEREFEREZ-VOUS A CES
NUMEROUS POUR TOUTE
CORRESPONDANCE

LOCATION

TRAILER NUMBER /
REMORQUE NombreSALESMAN /
VENDEUR

CREDIT REP / REP DU CRÉDIT

SALES REP / REP. DE
VENTES

PIC

FRANK

042

R. BLAIS

CUSTOMER ID / ID DU
CLIENTORDER DATE / DE LA
COM

CUSTOMER PO NUMBER / CLIENT PO Nombre

JOB / FICHIER

FIELD SALES REP / REP
REGIONAL DES VENTESCUST SERVICE REP /
SERVICE CLIENTE

46024

09/22/15

PO29864

BILL OF LADING NUMBER / NO DE CONNAISSEMENT

022903

CARRIER / TRANSPORTEUR
WILRIDE

G.ATTENBOROU

M2A

ITEM NO. / NUMÉRO	ORIGINAL ORDER QUANTITY / Quantité d'ordre ORIGINAL	UNIT / UNITÉ	PREVIOUS SHIPPED QUANTITY / PRÉCÉDENT Quantité livrée	MFG. PART NUMBER / MFG. PARTIE NUMÉRO	ALLOY & TEMPER / ALLIAGE & TEMPER	FINISH DESCRIPTION / DESCRIPTION DE FINITION	NBR OF PKGS / NBR DE PKGS	GROSS LBS / LIVRES BRUT	NET QUANTITY / QUANTITÉ NETTE	UNIT / UNITÉ	QUAN DU Quant rais
001	1,108	LB		DAA-897121-1	6061 T6		2	1,228	1,184	LB	
	502	KG		D2600-1-160P	160.0000 IN			557	537	KG	
	83	PC							92	PC	
Cut(+): 0.1180 Cut(-): 0.0000 Min: -10 % Max: 10 %											
						856646 / 278658	1	613	591		46
						856646 / 278659	1	615	593		46

Transportation/Traffic damages and/or shortage claims are to be noted on the delivery copy of sellers shipping packing lists and signed and dated below by customers authorized representatives.
No return materials will be accepted for credit without permission. The articles and/or services covered by this shipping packing list were produced in accordance with the fair labor standards act of 1938 as amended. Order accepted subject to the terms and conditions stated on the reverse side.

CUSTOMER ACKNOWLEDGEMENT OF GOODS DELIVERED AND CONDITION

Page 1

2	1,228	1,184	LB
	557	537	KG
		92	PC
TOTALS			

DATE OF DELIVERY

DRIVER



CERTIFICATE OF COMPLIANCE

SIGNATURE ALUMINUM CANADA

1850 CLEMENTS RD
PICKERING, ON L1W 3R8

Cert Date	Cert No.	Sales Order	Page
10/08/2015	5367146	120622	1
Cust PO	B/L No	Lot	Date
PO29864	022903	856646	10/14/15

Sold To	Ship To
46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA	46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA

Item No	Part No	Item Description	Cust Part
001	DAA-897121-1	160" Mill 6061 T6	D2600-1-160P
Gross Weight	1,228 LBS		
Net Qty	1,184 LBS	92 PCS	2 PKGS
Specification			Die Desc
AMS-QQ-A-200/8 & ASTM B221-08			

Mechanical Tests:

Tensile	Yield	% Elongation	Conductivity	HRE
MPA / KSI	MPA / KSI			
289.7 / 42.0	255.2 / 37.0	9.2	N/A	90

Chemical Analysis:

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	V	Zr
0.69	0.19	0.23	0.05	0.89	0.06	0.15	0.02	0.01	0.00

This Material is Made in Canada

This Material is RoHS Compliant

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Mazzotta
Director of Quality
Signature Aluminum Canada Inc



ISO 9001/TS16949 Registered Company

Visit us at www.signaturealum.com



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO29864**

Purchase Order Date 9/22/2015

PO Print Date 9/22/2015

Page Number 1 of 2

Order From :

VC-BON001

Ship To : DART AEROSPACE LTD

SIGNATURE ALUMINUM CANADA INC.
C/O/ T10322C
P.O. BOX 4488, STN A
TORONTO, ON M5W 4H1
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-427-6550

Ship To Contact
Ship To Phone
Ship Via: Yours ppd
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB Destination-Collect

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D2600-1-160P	Extrusion Round 3" 206	10/14/2015 Yes 10/14/2015		83.00 Each	\$40.80	\$3,386.40
	EXTRUDE AS PER DWG D2600 REV. E B136919						
	EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF TUBE MATERIAL MUST BE SMOOTH AND FREE FROM DEFECT SCRATCHES,NICKS,DENTS						
Line Total:							\$3,386.40
2	71401-45	PROCUREMENT QUALITY CLAUSES	10/14/2015 No 10/14/2015		1.00 <i>15/10/15</i> <i>50</i>	\$0.00	\$0.00
	Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable) A026 certification of material conformance A041 quality management system A042 dart notification by supplier A043 retention of quality documents						

Note:

9/22/2015